

Umetco Minerals Corporation



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August 24, 1987

Mr. Steve McNeal
Division of Environmental Health
Utah Department of Health
150 West North Temple
Salt Lake City, Utah 84110

Dear Mr. McNeal:

Re: Hecla Treatment Plant and Silver Bell Mine Discharge Analyses

We have received the analyses for the last water samples for the above-named facilities. The results are as follows:

	Hecla Treatment Plant	Silver Bell Mine Discharge
pH (Field)	6.5	6.5
Ra226, pCi/L (R)	12 + 2	15 + 2
Nat. Uranium, pCi/L (R)	270	1970
TDS, mg/L	526	1260
TSS, mg/L	< 5	23

Excavation of the Wilson-Silver Bell pond was started on July 27, 1987 and the excavation and compaction has been completed with the exception of some touch-up work. Some of the in-place material was tested for permeability by making use of air entry permeameters. The results of the tests are as follows:

Test No.	Approximate Location		Elev.	Permeability
	North	East		
1	114805	110230	6" below original grade	Very fast flow (numerous roots in topsoil)
2	114815	110230	7178.5	3×10^{-7} cm/sec
3	114810	110235	7178.5	5×10^{-7} cm/sec
4	115080	110475	7182	No results
5	115080	110485	7185	4×10^{-7} cm/sec

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The material represented by Test No. 1 was not used but was stockpiled. Test No. 4 represented a grayish shale which was excavated, compacted, and used in the construction of the berm. The material of the liner was tested but I do not have the results yet.

The Ra226 concentration in the discharge water from the Hecla treatment plant has increased to 12 pCi/L. The evaluation of the Dow XF S43230 resin by the White Mesa personnel indicates that the resin is not properly loading. We will investigate three alternative proposals for removing the excess Ra226 from the mine discharge water. These are as follows:

- 1) Converting the ion exchange plant to a barium chloride plant.
- 2) See if other ion exchange resins will do the job.
- 3) Build models to determine the permeability and Ra226 attenuation of clays in the local area. The plan would be to construct clay lined ponds, to install drain pipes in a gravel bed and then to put a clay layer on top to remove the Ra226. The idea is to duplicate what had been going on at the seep, but to do it under controlled conditions.

Yours truly,

Niels B. Haubold
Niels B. Haubold
Manager of Mines

NBH/jac

xc: Messrs. D. Ariotti

R. F. Barnett
J. L. Hasty
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